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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/451,915	12/01/1999	RYUJI NISHIMURA	H-864	9658

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EXAMINER	
WU, DOROTHY	
ART UNIT	**PAPER NUMBER**
2697	4

DATE MAILED: 08/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/451,915	Applicant(s) NISHIMURA ET AL.	
	Examiner Dorothy Wu	Art Unit 2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claim 11 recites the limitation "an encoder for generating a first or second image data by compressing data volume in frames of the first or second video signals output from the signal processor by a first compressing method, and generating a third image data by compressing data volume in frames of the second video signals output from the signal processor by a second compressing method." There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-11, 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Kato, U.S. Patent 6,148,031.

Regarding claim 1, the admitted prior art teaches an image pickup device (page 1, line 5) comprising: a photoelectric sensor (CCD), wherein the pixel signals accumulated in each pixels are outputted with interlace by subsampling the pixel signals for every one line when capturing a

still image, which reads on a first signal read mode (page 2, lines 2-7), and a sum of the pixel signals in the two pixels adjoining each other in the vertical direction are sequentially outputted when capturing a motion image, which reads on a second signal read mode (page 1, lines 24-26). It is an inherent feature of a CCD to have pixels arranged in the vertical and horizontal directions for converting the light focused on the pixels to electric pixel signals. The admitted prior art teaches that for a still image, pixel signals of odd number lines are read on the first field, pixel signals of even number lines are read on the second field, and the still image is generated by sequentially converting the signals of the first and second fields, which reads on an interlace/non-interlace converter for converting the signals with the interlace, which output from the photoelectric sensor in the first signal read mode, to a non-interlaced signal (page 2, lines 5-9).

The admitted prior art does not teach a signal processor to converting signals into a specified format, a rate converter, an encoder for compressing the signals from the signal processor, a memory device, or a decoder. Kato teaches a signal processor (digital signal processor circuit **14**) for separating image data into luminance data and color-difference data to generate component signals, which read on the specified image format (col. 3, lines 22-24). Kato teaches that in the NTSC system, image data is written at a rate of 60 fields/s, but there are times when a rate of 30 frames/second is sufficient (col. 4, lines 13-16, 23-25). A rate converter for converting the number of the output images of the second video signal per a unit time into another number is inherently taught. Kato also teaches an encoder (image compression/decompression circuit **18**) for generating a first or second image data by compressing the first or second signals output from the signal processor (digital signal processor

circuit **14**) (col. 3, lines 42-53); a memory device (first memory **20**) for memorizing the first or second image data output from the encoder (image compression/decompression circuit **18**) (col. 3, lines 46-47, 50-53); and a decoder (image compression/decompression circuit **18**) for reproducing the first signal by decoding the first image data memorized in the memory device (first memory **20**) (col. 5, lines 23-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interlace/non-interlace reading methods of the admitted prior art with the compression/decompression units of Kato to make an image sensing apparatus that reads still and motion images using the same camera, and processes, encodes, stores, and decodes the data. One of ordinary skill would have been motivated to make such a modification to enable a camera to process both still and motion images so as to minimize the amount of memory required to store the images.

As best understood from the language of the claim, regarding claim 11, the admitted prior art teaches an image pickup device (page 1, line 5) comprising: a photoelectric sensor (CCD), wherein the pixel signals accumulated in each pixels are outputted with interlace by subsampling the pixel signals for every one line when capturing a still image, which reads on a first signal read mode (page 2, lines 2-7), and a sum of the pixel signals in the two pixels adjoining each other in the vertical direction are sequentially outputted when capturing a motion image, which reads on a second signal read mode (page 1, lines 24-26). It is an inherent feature of a CCD to have pixels arranged in the vertical and horizontal directions for converting the light focused on the pixels to electric pixel signals. The admitted prior art teaches that for a still image, pixel signals of odd number lines are read on the first field, pixel signals of even number lines are read

on the second field, and the still image is generated by sequentially converting the signals of the first and second fields, which reads on an interlace/non-interlace converter for converting the signals with the interlace, which output from the photoelectric sensor in the first signal read mode, to a non-interlaced signal (page 2, lines 5-9).

The admitted prior art does not teach a signal processor to converting signals into a specified format, a rate converter, an encoder for compressing the signals from the signal processor, a memory device, or a decoder. Kato teaches a signal processor (digital signal processor circuit **14**) for separating image data into luminance data and color-difference data to generate component signals, which read on the specified image format (col. 3, lines 22-24). Kato teaches that in the NTSC system, image data is written at a rate of 60 fields/s, but there are times when a rate of 30 frames/second is sufficient (col. 4, lines 13-16, 23-25). A rate converter for converting the number of the output images of the second video signal per a unit time into another number is inherently taught. Kato also teaches an encoder (image compression/decompression circuit **18**) for generating a first or second image data by compressing data volume in frames of the first or second video signals output from the signal processor by a first compressing method (col. 3, lines 42-47), and generating a third image data by compressing data volume in frames of the second video signals by a second compressing method (col. 3, lines 54-58); a memory device (first memory **20** and second memory **22**) for memorizing the first or second image data and the third image data that are output from the encoder (col. 3, lines 46-47, 61-63); and a decoder (image compression/decompression circuit **18**) for reproducing the first or second video signal by decoding the first or second image data and the third image data that are memorized in the memory device (col. 4, lines 36-37). As data

must be decompressed before being displayed, it would have been obvious for the decoder to decodes the third image data as well.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the interlace/non-interlace reading methods of the admitted prior art with the compression/decompression units of Kato to make an image sensing apparatus that reads still and motion images using the same camera, and processes, encodes, stores, and decodes the data. One of ordinary skill would have been motivated to make such a modification to enable a camera to process both still and motion images so as to minimize the amount of memory required to store the images.

Regarding claims 3 and 13, the admitted prior art teaches that the first signal generated in the first signal read mode is a still image (page 2, line 2), and the second signal generated in the second signal read mode is a motion image signal (page 1, line 25).

Regarding claims 4 and 14, the admitted prior art teaches that the effective pixel number of said photoelectric sensor in vertical direction approximates multiplication by an integer of the effective number of scanning lines in the television signal standard (page 2, lines 15-17).

Regarding claims 5 and 15, Kato teaches that individual images may be tagged as still images, which reads on the first image data representing one still image, and that the images captured during continuous image taking are a series of still images (col. 3, lines 47-56).

Regarding claims 6 and 16, the admitted prior art teaches that said arrangement of said pixels on said photoelectric sensor has a cycle of a units of two rows in the vertical direction and four lines in the horizontal direction, the pixels of the first color and the pixels of the second color are arranged alternately in the first lines, the pixels of the third color and the pixels of the

fourth color are arranged alternately in the second lines, the pixels of the second color and the pixels of the first color are arranged alternately in the third lines, and the pixels of the third color and the pixels of the fourth color are arranged alternately in the fourth lines (page 1, line 20-23; Fig. 3A).

Regarding claims 7 and 17, the admitted prior art teaches that said first color is magenta, said second color is green, said third color is cyan, and said fourth color is yellow (Fig. 3A).

Regarding claims 8 and 18, the admitted prior art teaches the use of green, blue, and red as the colors in the color filter (page 2, lines 17-20; Fig. 3C). It would have been obvious to one of ordinary skill to substitute the green, blue, and red colors into the filter arrangement of claim 6.

Regarding claims 9 and 19, the admitted prior art teaches that the effective pixel number of said photoelectric sensor in vertical direction approximates multiplication by an integer of the effective number of scanning lines in the television signal standard (page 2, lines 15-17).

Regarding claims 10 and 20, the admitted prior art teaches that the effective pixel number of said photoelectric sensor is 960, which is between 920 and 1020 (page 2, line 16).

3. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Kato, U.S. Patent 6,148,031, and further in view of Okayama et al, U.S. Pub. No. 2003/0122941.

Regarding claims 2 and 12, the admitted prior art in view of Kato teach the apparatus according to claim 1 and claim 11. See above. The admitted prior art in view of Kato do not teach that said interlace/non-interlace converter and said rate converter comprises a memory for

storing said signals output from the photoelectric sensor, and a memory controller for controlling writing and reading addresses and timings. Okayama et al teaches that interlaced signals are stored in frame memory locations based on whether the signals come from an odd- or even-numbered line [0069]. The signals are read out of memory by successively reading one odd frame followed by one even frame [0070]. The memory controller is inherently taught. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus taught by the admitted prior art in view of Kato with the practice of storing and reading out interlaced signals taught by Okayama et al to make an apparatus that stores interlaced signals in a predetermined fashion and reads out the signals in order to convert them to a non-interlaced format. One of ordinary skill would have been motivated to make such a modification to achieve a slower refresh rate while reproducing entire images.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dorothy Wu whose telephone number is 703-305-8412. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-7644.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)306-0377.

Dorothy Wu

DW
August 25, 2003

ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600